

Complete Summary

GUIDELINE TITLE

Hypertension. Nutrition management for older adults.

BIBLIOGRAPHIC SOURCE(S)

White JV. Hypertension. Nutrition management for older adults. Washington (DC): Nutrition Screening Initiative (NSI); 2002. 15 p. [36 references]

COMPLETE SUMMARY CONTENT

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INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT
CATEGORIES
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SCOPE

DISEASE/CONDITION(S)

Hypertension

GUIDELINE CATEGORY

Counseling
Evaluation
Prevention
Risk Assessment
Screening
Treatment

CLINICAL SPECIALTY

Cardiology
Family Practice
Geriatrics
Internal Medicine
Nutrition
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Dietitians
Health Care Providers
Nurses
Patients
Physicians

GUIDELINE OBJECTIVE(S)

To provide nutrition screening and intervention strategies for hypertension (HTN) that will enhance disease management and health care outcomes, and that will positively impact individual health and quality of life of older adults

TARGET POPULATION

Older adults with hypertension or those at increased risk for developing hypertension (HTN)

INTERVENTIONS AND PRACTICES CONSIDERED

Nutrition Screening and Evaluation

Screening for risk factors for hypertension (HTN), including

1. Blood pressure measurement
2. Identification of diet-related diseases or conditions that contribute to HTN
3. Identification of target organ damage
4. Measurement of height and weight
5. Evaluation of caloric intake, sodium intake, alcoholic beverage intake, smoking habits, and current medications

Nutrition Interventions

Counseling on the following lifestyle modifications:

1. Weight loss if overweight
2. Eliminating or limiting alcohol intake
3. Reduction of sodium intake
4. Maintenance of adequate intakes of potassium, calcium, and magnesium
5. Reduction of dietary saturated fat and cholesterol
6. Smoking cessation
7. Increased aerobic physical activity

MAJOR OUTCOMES CONSIDERED

- Impact of nutritional status on hypertension (HTN)
- Diet-related diseases or conditions associated with increased risk for HTN
- Adverse health outcomes associated with uncontrolled or poorly controlled HTN

- Impact of HTN on health services utilization and costs

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Informal Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Professionals with expertise in nutrition, medicine, and allied disciplines served as authors and reviewers.

The information in A Physician's Guide to Nutrition in Chronic Disease Management for Older Adults-Expanded Version is derived from The Role of Nutrition in Chronic Disease Care, a 1997 Nutrition Screening Initiative (NSI) publication. The authors updated their 1997 work through an extensive review of the literature, using evidence-based data where possible and consensus-based information when definitive outcomes were not available.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

As part of the Swedish Trial in Old Patients with Hypertension (STOP), researchers conducted a cost-effectiveness study of a cardiovascular multiple-risk-factor intervention program in treated men. The costs and outcomes of the program were compared with those of conventional drug treatment alone. The cost effectiveness ratio was calculated as the net cost (treatment costs minus saved costs of reduced cardiovascular morbidity) of the multiple intervention program divided by the increased number of life-years gained compared with conventional drug treatment. Costs for travel, drug use, educational materials, and meetings with the physician, nurse, and dietitian were calculated. Average cost per life-year gained was estimated to be \$667.00 (4000 SEK, 1 SEK = \$6.00), which was lower than that for drug treatment alone.

In the portion of the STOP trial that assessed the cost-effectiveness of treatment of hypertension with drugs alone, cost per life-year gained was estimated to be \$833.00 (5000 SEK) for men and \$2500.00 (15,000 SEK) for women. In most studies, treatments with cost-effectiveness ratios below \$16,667.00 (100,000 SEK) are considered highly cost effective. Cost effectiveness data from these Swedish studies of hypertension are used internationally as justification for assigning a high priority to the treatment of hypertension in older individuals. Nonpharmacologic therapy is a particularly effective and appropriate therapeutic modality in older persons.

Costs for provision of basic nutrition information and educational materials per patient would be minimal and would require only 1 to 2 minutes of the primary health care provider's time to provide. One- to two-minute health promotion interventions have been shown to improve patient outcomes.

The cost of consultation with a registered dietitian or other qualified nutrition professional varies by region of the country and complexity of nutrition issues to be addressed. Costs incurred for dietary evaluation and nutritional counseling would be offset in savings resulting from reductions in the dosage or number of medications required to control blood pressure and fewer admissions or readmissions to acute or long term care facilities.

METHOD OF GUIDELINE VALIDATION

External Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

An interdisciplinary advisory committee of nationally recognized practitioners in medicine, nutrition, and geriatrics reviewed the chapter related to their area of expertise.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Goals of Nutrition Management for Hypertension

Goals of nutrition screening and intervention for hypertension (HTN) are as follows:

- Normalization of blood pressure
- Prevention of or improvement in the diet-related diseases associated with the development of HTN
- Maintenance of a healthy weight
- Normalization of blood sugar levels
- Normalization of blood lipid levels
- Prevention of or improvement in target organ damage associated with HTN

Compliance with regimens for the prevention and treatment of HTN will be facilitated by:

- Provision of education about conditions and treatment which is geared to literacy level and learning style
- Individualization of preventive or therapeutic protocols
- Reinforcement for appropriate lifestyle modifications and medications use
- Supportive social systems
- Collaboration with other health care professionals

Nutrition Screening Guidelines for Hypertension

At a minimum, nutrition screening for risk factors for hypertension (HTN) should include the following:

- Measurement of blood pressure following the procedure outlined in the Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC VI 1997) at each office visit
- Identification of diet-related diseases or conditions that contribute to HTN
- Identification of target organ damage (TOD)
- Measurement of height (annually in those aged 65 years and older)
- Measurement of weight at each office or clinic visit
- Evaluation of caloric intake if significant over- or underweight is present
- Evaluation of sodium intake, of alcoholic beverage intake, of smoking habits
- Evaluation of current medications

Measurement of blood pressure combined with the use of Nutrition Screening Initiative's (NSI) Level II Screen provides a mechanism to address the majority of elements listed above. The Level II Screen can be an invaluable starting point in the identification and treatment of nutritional risk factors associated with hypertension.

Nutrition Intervention Guidelines for Hypertension

Consistent with the recommendations of the Sixth Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure (JNC VI 1997) nutrition intervention in hypertension should consist of one or more of the following:

- Lose weight if overweight. A weight loss of as little as 4.5 kg (10 lb) can reduce blood elevations in a large proportion of individuals who are >10% above ideal body weight.
- Eliminate or limit alcohol intake to <1 oz/day of ethanol (24 oz of beer, 8 oz of wine, or 2 oz of 100-proof distilled spirits). The US Dietary Guidelines for Americans state that alcoholic beverage intakes for women should be less than half of that listed in this recommendation.
- Reduce sodium intake to less than 100 mmole/day (<2.4 g sodium or approximately 6 g sodium chloride [1 tsp salt]). A reduction to this level of salt intake in hypertensives, especially in those who are elderly or black, helps to attenuate the rise in systolic blood pressure (SBP) associated with age, lower systolic blood pressure and diastolic blood pressure (DBP) in many with established HTN, and decrease or eliminate the need for medication.
- Maintain adequate intakes of dietary potassium, calcium, and magnesium. For adults, the usual intake of potassium is 3500 mg (90 mEq)/day; the Recommended Dietary Allowance for calcium is 800 to 1200 mg/day, and for magnesium is 280 to 350 mg/day.
- Reduce dietary saturated fat and cholesterol for overall cardiovascular health. However, as consistent data becomes available regarding the interrelationship of genotype, diet, and plasma lipid response, nutrition recommendations for specific genotypes may emerge that are very different from the general dietary guidelines being prescribed currently. Reducing total fat intake also helps to reduce caloric intake which is important in weight control and the management of type 2 diabetes mellitus and other disease states that increase the risk of HTN. Consistent with the recommendations listed in the Second Report of the National Cholesterol Education Program (NCEP 2001), total fat intake should be <30% and saturated fat should be <10% of total daily calories, and cholesterol intake should be <300 mg/day.
- Stop smoking
- Increase aerobic physical activity to 30 to 45 minutes most days of the week.

In individuals who exhibit a high-normal blood pressure, have a family history of hypertension, or have a diet-related disease or condition that predisposes them to the development of HTN, the lifestyle modifications mentioned above should be initiated as soon as problem conditions or behaviors are recognized, even in the absence of frank HTN. A similar strategy may be appropriate for the black community, since the propensity of African Americans to develop HTN is much greater than is that of whites or those of Hispanic origin. In individuals with HTN, lifestyle modifications may be used as definitive or adjunctive therapy at the discretion of the primary care provider. They improve the general risk profile for cardiovascular disease, offer multiple benefits at low cost, and carry minimal risk of adverse effects.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Benefits of Nutrition Management to Patients

The benefits of treating elderly people with systolic and diastolic hypertension or with isolated systolic hypertension are impressive. Treatment of hypertension decreases overall mortality by 20%, cardiovascular mortality by 33%, the incidence of fatal and non-fatal cerebrovascular accidents by 40%, and the complications of coronary heart disease by 15%. Because elderly persons are more likely to have overt or latent and asymptomatic diseases, lifestyle modification is more beneficial in the elderly than in those who are middle-aged, especially in patients with concurrent diet-related disease.

The use of lifestyle modifications to lower elevated blood pressure is increasingly advocated due to a number of factors: cost, adverse drug effects, quality of life concerns, non compliance with medications, and increased risk of target organ damage when treated with drugs only.

Benefits of Nutrition Management to Health Service Providers

Data supports the cost-effectiveness of non-pharmacologic treatment of hypertension. In a cost-effectiveness study of a cardiovascular risk-factor intervention programs, the average cost per life year gained was lower than for drug treatment alone. Refer to the "Cost Analysis" field.

Subgroups Most Likely to Benefit

Subgroups at risk for developing hypertension: African Americans; those in lower educational and socioeconomic groups; those living in the southeastern United States; elderly women, especially black women; people who are overweight or obese, have diabetes mellitus, or dyslipdemia.

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Health care professionals must decide how best to implement these recommendations in multiple settings and in patients with diverse needs. It is essential to develop a habitual approach to the nutrition screening and assessment of nutritional status in older adults, and develop policies, protocols, and procedures to ensure the implementation of disease-specific nutritional interventions. The reader should refer to other Nutrition Screening Initiative (NSI) materials for additional information and to facilitate a systematic approach to nutritional care. NSI screening tools are included as appendices of the original guideline document -- DETERMINE Your Nutritional Health Checklist and Levels I and II Screens. The Checklist was developed as a self-administered tool designed to increase public awareness of the importance of nutritional status to health and to encourage older people to discuss their own nutritional status with their primary provider. Based on this guided discussion, the provider can decide if additional screening or assessment is indicated. The Level I Screen was designed for administration by non-physician health care providers in community settings while Level II requires administration by physicians and physician-extenders that have the ability to order and interpret laboratory parameters indicative of nutritional health.

Evaluation Criteria to Document Improved Health Outcomes

The evaluation criteria which help to document the impact of nutrition screening and intervention on the patient's health status are consistent with the goals of nutrition screening and intervention for hypertension (HTN). They are described below:

- Normalization of blood pressure. A blood pressure of <130/85 mmHg is considered normal; <120/80 mmHg is considered optimal.
- Prevention of and/or improvement in the diet-related diseases associated with the development of hypertension.
- Maintenance of a healthy weight. A body mass index (weight in kg/height in meters squared) in the range of 22 to 27 for those 65 years of age or older, or a weight in the desirable range on standard weight-for-height-tables is considered a healthy weight.
 - Normalization of blood sugar levels. Fasting plasma glucose of <126 mg/dl; glycosylated hemoglobin (HbA1c) <6.5
 - 2-hour postprandial plasma glucose <140 mg/dl; oral glucose tolerance test values between time-zero and 2-hour plasma glucose <200 mg/dl.
 - Normalization of blood lipid levels (desired levels dependant on risk stratification).
- Prevention of or improvement in target organ disease (TOD) associated with unrecognized or poorly controlled HTN

Evaluation Criteria to Document the Impact of Nutrition Management on the Health Care System

In addition to the evaluation criteria listed above, the following may be used to assess the impact of nutrition screening and intervention for HTN on the delivery of health care. Reductions or improvements in these indicators could be used to document a positive impact of nutrition screening and intervention in individuals to whom routine and appropriate nutritional care is made available.

- Incidence of HTN in the population served
- Incidence/improvement in diet-related diseases or conditions that contribute to HTN
- Type, quantity, or number of doses of a medication(s) needed to treat HTN
- Number of visits to the health care provider needed to successfully manage HTN
- Rates of admission to or length of stay in acute or long term care settings for the management of HTN or its consequences
- Incidence/severity in target organ disease associated with unrecognized or poorly controlled HTN

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

White JV. Hypertension. Nutrition management for older adults. Washington (DC): Nutrition Screening Initiative (NSI); 2002. 15 p. [36 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

However, the Joint National Committee on the Detection, Evaluation, and Treatment of High Blood Pressure was a strong basis for the guideline (The Sixth Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure [JNCVI]. Arch Intern Med 1997; 157: 2413-2446).

DATE RELEASED

1998 (revised 2002)

GUIDELINE DEVELOPER(S)

American Academy of Family Physicians - Medical Specialty Society
American Dietetic Association - Professional Association
Nutrition Screening Initiative - Professional Association

GUIDELINE DEVELOPER COMMENT

The Nutrition Screening Initiative (NSI) is a partnership of the American Academy of Family Physicians (AAFP) and the American Dietetic Association (ADA). It is funded in part through a grant from Ross Products Division, Abbott Laboratories.

Additional information can be obtained from the [AAFP Web site](#) and the [ADA Web site](#).

SOURCE(S) OF FUNDING

The Nutrition Screening Initiative (NSI) is funded in part through a grant from Ross Products Division, Abbott Laboratories.

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previously published version: Nutrition Screening Initiative (NSI). Nutritional strategies efficacious in the prevention or treatment of hypertension. Washington (DC): Nutrition Screening Initiative (NSI); 1998. 15 p.

GUIDELINE AVAILABILITY

Electronic copies: Available from the [American Academy of Family Physicians \(AAFP\) Web site](#) and to members only from the [American Dietetic Association \(ADA\) Web site](#).

Print copies: Not available

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Nutrition Screening Initiative (NSI). A physician's guide to nutrition in chronic disease management for older adults. Washington (DC): Nutrition Screening Initiative (NSI); 2002. 18 p.

Electronic copies available in Portable Document Format (PDF) from the [American Academy of Family Physicians \(AAFP\) Web site](#) and the [American Dietetic Association \(ADA\) Web site](#).

Electronic copies also available for download in Personal Digital Assistant (PDA) format from the [American Academy of Family Physicians \(AAFP\) Web site](#).

Print copies: Available from Ross Educational Service Materials; Phone: (800) 986-8503; Web site: www.Ross.com/nsi.

PATIENT RESOURCES

The following is available:

- Managing chronic disease. Food tips if you need extra nutrients. In: Nutrition Screening Initiative (NSI). A physician's guide to nutrition in chronic disease management for older adults. Washington (DC): Nutrition Screening Initiative (NSI); 2002. 4 p.

Electronic copies available in Portable Document Format (PDF) from the [American Academy of Family Physicians \(AAFP\) Web site](#) and the [American Dietetic Association \(ADA\) Web site](#).

Electronic copies also available for download in Personal Digital Assistant (PDA) format from the [American Academy of Family Physicians \(AAFP\) Web site](#).

Print copies: Available from Ross Educational Service Materials; Phone: (800) 986-8503; Web site: www.Ross.com.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on September 1, 1998. It was verified by the guideline developer on December 1, 1998. The summary was updated by ECRI on April 16, 2004. The updated information was verified by the guideline developer on June 21, 2004.

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